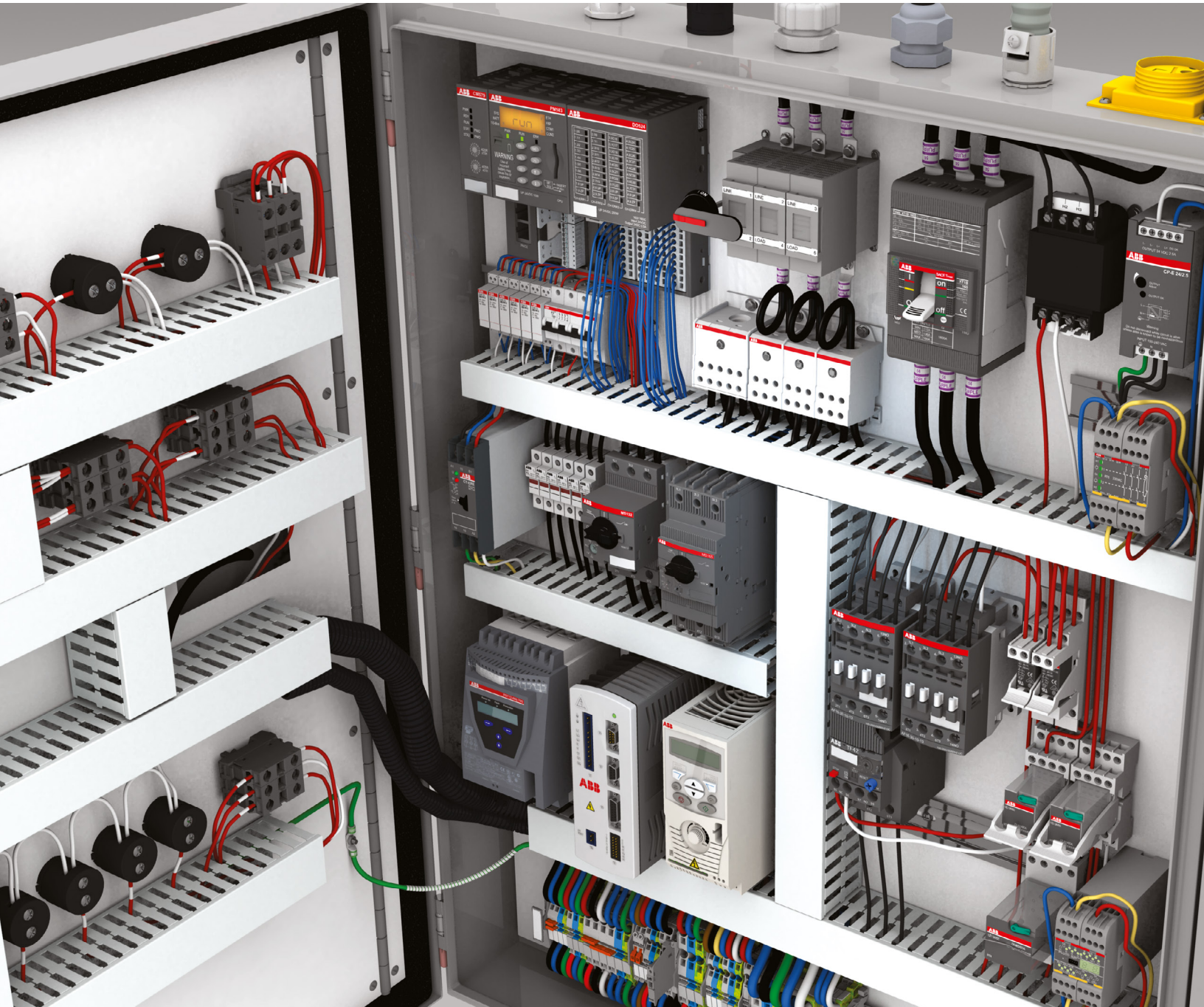
PANORAMA

# ABB solutions for control panels

## Capabilities guide



# Top reasons to choose ABB as your preferred supplier of low voltage control products




**1. The most extensive product range, enabling you to source your critical components from one supplier**

- Arc Guard System™
- Connection devices
- Contactors and overloads
- DIN rail components
- Disconnects
- Drives
- Enclosures
- Fittings
- Grounding systems
- Interface relays
- Limit switches
- Lugs
- Manual motor starters
- Miniature circuit breakers
- Molded case circuit breakers
- Panelboards
- Pin and sleeve connectors
- Pilot devices
- PLCs
- Power circuit breakers
- Power distribution bus systems
- Safety locks
- Safety relays and PLCs
- Safety switches
- Sensors
- Starters
- Signal converters
- Softstarters
- Surge protection devices
- Timers and monitors
- Universal motor controllers
- Wire duct and wire wrap
- Wire termination systems

**2. Ease of product selection and installation**

- Comprehensive selection tools and extensive technical documentation for easy specification and use
- Wide variety of product options — from economical to highly sophisticated — offering maximum value
- Products designed for safety, easy installation, set-up, commissioning and maintenance
- Common style across product line helps you create a cleaner panel design

**3. Global support**

- ABB products are available in more than 100 countries, giving you the confidence of worldwide sourcing and support — no matter where you build and operate your equipment
- Global certifications to support your business worldwide
- One single partner to handle your support requirements

**4. Ease of doing business**

- Source for widest range of best-in-class products
- Pricing available 24x7x365 for qualified control panel partners
- Product selection tools, including configurators, cross references, product training and a dedicated web portal (www.electricalengineeringresource.com)

**5. Business efficiency resources**

- Regulatory compliance assistance
- Priority support

## Products

1 **Disconnect switches**

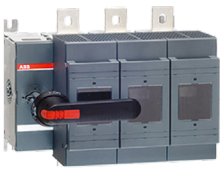


ABB has a wide portfolio of low voltage switches that includes fusible, non-fusible, change-over, enclosed and cam switches with ratings between 16 and 2000 amps for both AC and DC applications.
These disconnects are suitable for machinery, power distribution, switchboards, motor control centers and photovoltaic applications.

- UL508 and UL98 Listed
- Compact size
- High performance
- Safe to use and easy to install
- The most complete offering of disconnects on the market

2 **Programmable logic controllers (PLCs)**




ABB scalable PLC ranges provide solutions for small, middle and high-end applications. The platform offers performance levels for high availability, extreme environments or safety solutions, along with interoperability and compatibility in hardware and software.

- AC500 — Flagship PLC with perfo mance, communications and I/O capabilities for industrial use
- AC500-eCo — Compact, flexible and economical PLC
- AC500-S — Safety PLC for factory/machinery automation
- AC500-XC — Extreme-condition PLC for extended temperature range, vibration, hazardous gases, high altitudes and humid conditions

## 3 Surge protective devices (SPDs)





SPDs are designed for long service life, protecting equipment from surges due to lightning strikes, upstream equipment and utility load switching. They are suitable for use in hospitals, data centers, renewable energy, water/wastewater treatment and other critical-power applications.

- UL1449
- OVR DIN rail SPD for equipment protection; 15 and 40kA
- Replaceable MOV cartridges and modules
- Joslyn® line offers a complete range of SPDs for all applications that can help protect your sensitive equipment from both overcurrent and overvoltage events

## 4 Miniature circuit breakers (MCBs)



ABB, the inventor of miniature circuit breaker technology, offers the largest selection of current-limiting, compact, DIN-rail mounted MCBs, including solutions for the wind and solar PV markets, for AC and DC applications. Thermal and magnetic trips are provided to cover both overcurrent and short-circuit faults.

- UL489, UL1077 and IEC
- 0.2 to 125A, up to 600V AC/DC and 50 kA short circuit protection
- Accessories–bus bars, auxiliary and signal contacts, shunt trip, under-voltage release and lock out/tag out

## 5 Electronic relays and controls



ABB's assortment includes a wide range of products for switchgear and control gear for electrical equipment and automation of machinery and plants. These versatile products offer maximum security, economic efficiency and capacity. Ongoing development of the product range makes new applications possible.

- Timers
- Measuring and monitoring relays
- Grid-feeding monitors
- Sensor interface relays and signal converters
- Universal motor control

## 6 Fuse holders



ABB offers a wide rang of DIN rail mountable, UL approved IP20 fuse holders. They offer venting grooves and cooling chambers to improve heat dissipation, increasing the durability and reliability of the fuse holders. Our ergonomic flip hinge makes fuse replacement easier in small spaces even while wearing gloves. All models offer blown fuse indication for quick identification of fuse failures.

- Class J — up to 60A at 600V AC/DC
- Class CC — up to 30A at 600V AC/DC
- Midget 10 x 38mm — up to 30A at 600V AC/DC
- Photovoltaic PV — up to 30A at 1000VDC

## 7 Manual motor starters



Manual motor starters can reduce panel space, installation time and cost. Applications include manual motor control, local motor disconnect, group installation and self-protected combination motor controllers.

- Up to 100A, 100 HP, and 65kA short circuit protection
- Self-protected type E and F (up to 100kA)
- Accessories include: connection sets, auxiliary contact blocks and shunt trips, power-feed blocks, under-voltage release and short circuit signaling contacts

## 8 Softstarters



The ABB softstarter portfolio consists of three different ranges to cover almost all possible motor applications from 3 to 1250 amps and main voltages up to 600 VAC.

- PSR — compact, 3 to 105A
- PSE — efficient, 18 to 370A
- PSTX — advanced, 30 to 1250A
- A full line of enclosed starters is also available

## 9 Low voltage drives and micro drives



ABB machinery drives are designed to meet the production and performance needs of machine builders, system integrators, panel builders and end users in a broad range of applications. The drives can be flexibly programmed to meet the demands of different machine solutions. A wide range of features and options provides optimal solutions.

## 10 Connections

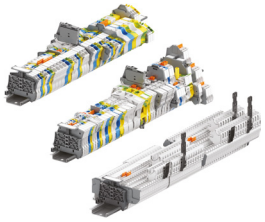


ABB offers one of the most comprehensive ranges of terminal blocks on the market to meet a variety of customer requirements: from small panel builders to large OEMs, from standard distribution and control panels to the most specialized applications in key industries such as energy, maritime, explosive atmospheres and traction.

- Distribution, pluggable, railway and IDC blocks
- Screw or spring clamp

## 11 Pilot devices



ABB offers two ranges of pilot devices for 22mm diameter holes. The modular range includes operators, holders and contact, and LED blocks that can be combined. The compact range offers all functions built into a single unit. Adapter rings enable use of 22mm pilot devices in 30mm diameter holes.

- IP66, IP67, IP69K and NEMA 1, 3R, 4, 4X, 12, 13
- Wiping contacts and integrated LEDs
- Standard and custom legend plate shrouds

## 12 Wiring duct



Ty-Duct® premium duct is ideal for electrical enclosures, machine building and datacom closets. Two-point flush covers install with less force and greater capacity.

- Upper and lower score lines permit tool-less finger breakout and easy sidewall section removal
- Universal mounting clip serves as a cable tie mounting base or as a snap connector for duct dividers
- Easily removable protective film prevents scratches and allows for temporary labeling

## 13 Tmax/XT molded case circuit breakers (MCCBs)



Tmax MCCBs provide an extremely high level of performance with limited overall dimensions and installation simplicity. The Tmax line is available in ten sizes, a complete range of trip unit options and with a wide variety of electrical and mechanical accessories.

- Thermal magnetic and electronic versions
- Up to 3000A with up to 100kA of short circuit protection
- 240, 480, 600V optimized solutions
- Fixed, plug-in or drawout
- Accessories include: motor operators, auxiliary and signal contacts, shunt trip, under-voltage release and bell alarms

## 14 Transformers



ABB X series industrial control transformers provide stepped-down voltages for machine tool control devices and industrial control panels. They are made with high-quality silicon steel laminations to minimize core loss and optimize performance.

- 45 to 5000 VA
- Multiple primary AC voltages
- 24, 115, 24/115 AC secondary voltages
- Epoxy-encapsulated coils and molded-in terminals

## 15 Power supplies



ABB's CP range of innovative primary switch mode power supplies provides compact construction, easy DIN rail mounting and high efficiency, reliability and safety. Accessories include buffer units, redundancy modules and more.

- 5, 12, 24 or 48 VDC output voltage with wide range of AC or DC supply voltages
- High efficiency, up to 94%
- Suitable for use in harsh industrial environments
- Open-circuit, overload and short-circuit proof input fuse

## 16 Safety products



ABB Jokab Safety provides an extensive range of innovative products and solutions for machine safety systems. These products save labor and components, simplify maintenance and troubleshooting and provide the highest level of safety.

- Safety relays, safety controllers and programmable safety controllers
- Light barriers, sensors, locks and control devices
- Machine fencing systems

## 17 Contactors and overloads



ABB's AF contactors signify a major advancement in motor control and power switching. They come standard with electronic coils and built-in surge suppression. The AF contactors, along with ABB's short circuit and overload protective devises, provides the user with fully tested, UL listed Short Circuit Current Ratings (SCCR) motor combinations.

- UL general use and motor switching
- 9 to 2650A
- 5 to 900 HP
- Up to 1000V
- 3P and 4P versions
- Accessories include: connection sets, auxiliary contact blocks, interlocking units, timers, electronic and thermal overload relays

## 18 Ice cube and solid state relays



ABB's solid state and electromechanical relays ensure reliable voltage conversion between process peripherals and higher-level control systems. Suitable for use in extreme environments, our relays ensure reliable signal switching and electrical isolation for sensitive electronics such as PLCs. A wide variety of pluggable interface relays with standard or logic sockets can be used for switching AC or DC loads.

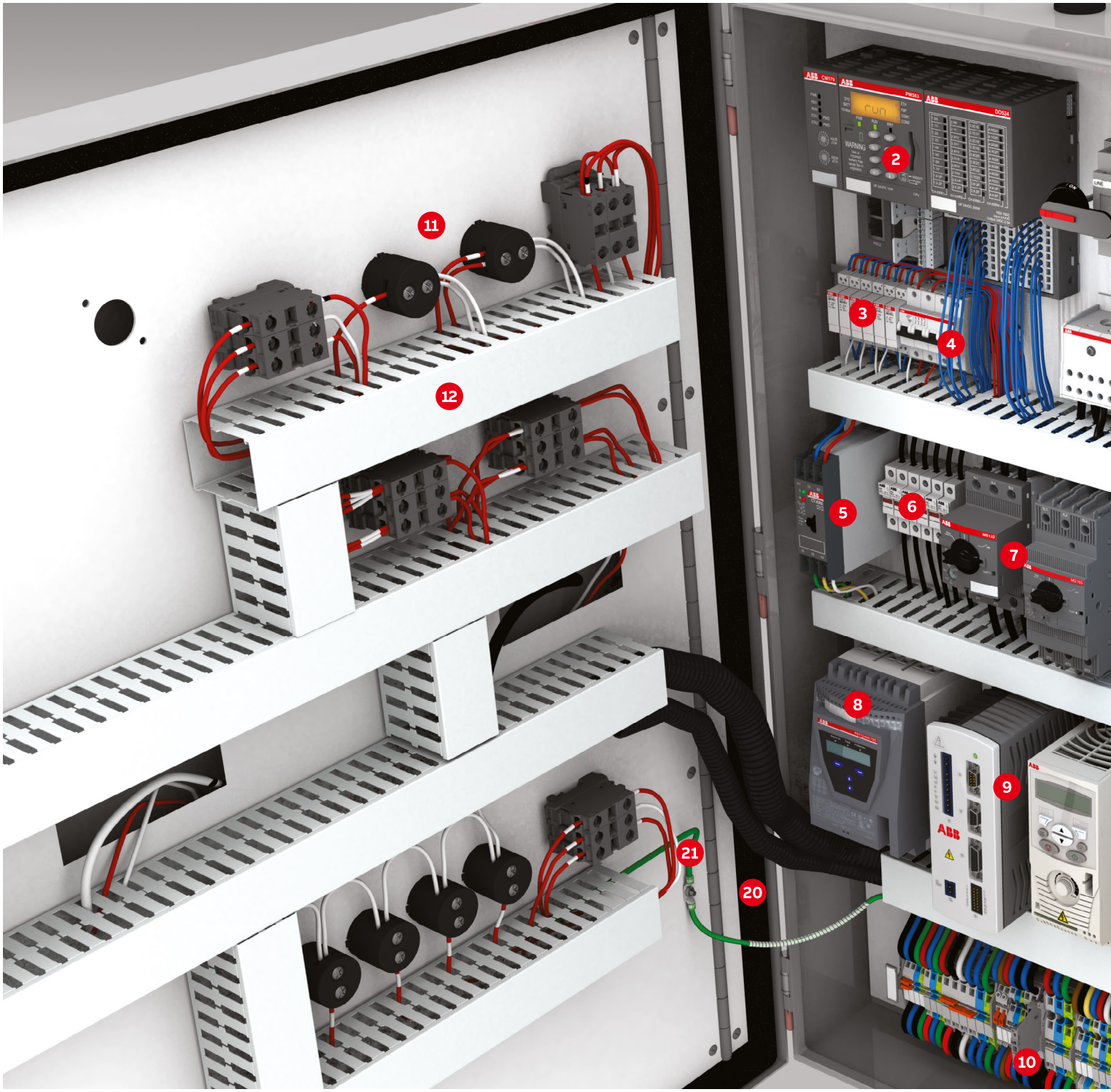
- Coil voltages from 5 VDC to 230 VAC
- Up to 16A contact ratings and up to four output contacts
- Pluggable function modules such as RC elements available
- Integrated test button for manual operation
- Gold-plated contacts available for lowest contact resistance

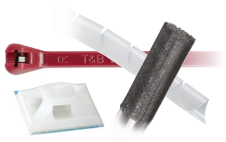
## 19 Starters



ABB's starters can be used in most motor control applications using mechanical starting means as well as solid state.

- IEC and NEMA rated
- Combination tested to 200kA
- Enclosed and open styles



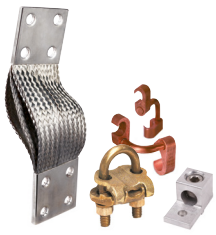
**20 Ty-Fast®**
cable ties, wire sleeving, mounting accessories and spiral wrap



**21 SpecKon®**
crimp-on wire termination



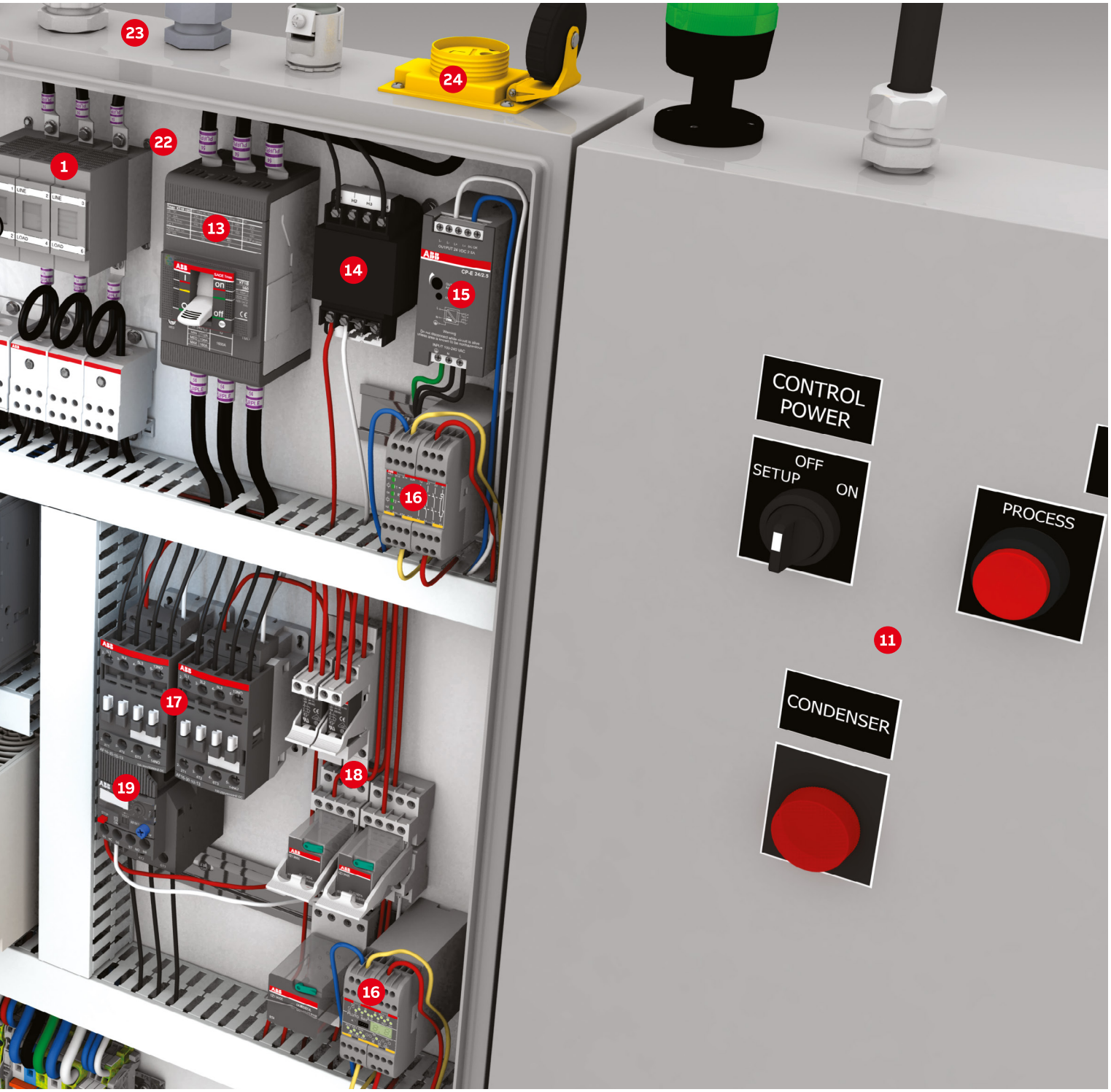
**Carlon®**
non-metallic enclosures



**Blackburn® grounding and mechanical lugs**
grounding systems, mechanical lugs and flexible braids



**22 Color-Keyed® compression**
narrow-tongue lugs and KUBE® flag connectors






**23 T&B® Fittings**
Liquidtight, cord and cable fittings, CHASE® fittings and multi-hole cord grips



**24 Russellstoll®**
pin and sleeve connectors



**Installation tooling**
ergonomic application tooling




**EZCODE™**
safety labels, tags, signs, wire markers and barricade tapes

**Arc Guard System™**



The ABB Arc Guard System protects people, equipment and productivity by quickly detecting an arc fault and tripping the incoming circuit breaker. Using light as the main condition, the unit trips instantaneously, overriding all other protections and delays, which is crucial when reaction times need to be measured in milliseconds. Up to 30 sensors can be connected with fiber optic cable to each monitoring unit.

- Fiber optic detection
- Pre-calibrated sensors
- IP54 protection
- 30 optical detector inputs
- Optional current sensing unit

**Limit switches**



With the broadest range of solutions on the market, ABB offers all components from position sensors via automation systems to complete control panels.

- IP65 (plastic) and IP66 (metal) protection
- 30mm to 60mm width
- Complete safety line
- Three cable conduits
- Miniature pre-wired line
- Actuators: safety key, plunger, roller, adjustable lever, flexible rod and pull action

**Emax 2 Power circuit breakers (PCBs)**



Emax 2 PCBs provide the latest protection technology with ease of installation and use. They function as circuit breakers for general protection of plants end-user complexes and electric lines and as protection circuit breakers for generators, motors, transformers and capacitors, making them the ideal solution for designers, installers, OEMs and end users.

- 600 VAC
- Available in fixed and drawout styles
- Up to 5000A
- Up to 100kA of short circuit protection
- Accessories include: motor operators, auxiliary and signal contacts, shunt trip, under-voltage release, bell alarms and more

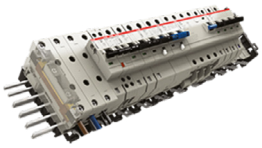
**Circuit monitoring system (CMS)**



The CMS is a compact system used for measuring performance of diverse AC and DC load currents to reduce downtime and detect potential issues before they occur. It is easy to use and has intuitive installation and configuration via integrated touch screen (CMS-600) or web client (CMS-700) in original installations or field retrofits.

- Open and closed core sensors up to 160A true RMS with up to 0.5% accuracy
- Up to 96 sensors can be monitored by one control unit
- Measured data can be accessed via Ethernet or polled via Ethernet or Modbus TRU protocol interface

**SMISSLINE TP flexible power distribution bus system**



Modular assembly allows for simple reconfiguration and maintenance, and reduces installation time drilling, taping wire connections, and space. Design changes and future expansion are easily accomplished by connecting additional devices.

- Certified for UL508 and UL489 applications
- 200A center-fed bus
- 0.5 to 63A
- Combination motor starters

**Human machine interface (HMI)**



Versatile visualization for productivity with design — the CP600 range is dedicated for machines and systems requiring visualization performance or representative design.

- Each range provides seven TFT 65,536 color touch screens from 4.3" to 15"; 16:9 wide screen and 4:3 panels; 16:9 offers large area for HMI pages in compact space
- Dimming, including black screen, to maintain dark operator position
- Aluminum case with IP66 front plate, very robust, appealing design
- High performance 32-bit controller

**Automation Builder software**

ABB Automation Builder is the integrated software suite for machine builders and system integrators wanting to automate their machines and systems in a productive way. Combining all of the tools required for configuring, programming, debugging and maintaining automation projects from a common intuitive interface, Automation Builder addresses the largest single cost element of most of today's industrial automation projects: software.

- Premium version supports advanced engineering productivity and collaboration
- Standard version enables integrated engineering for PLCs, drives, motion, panels and robots
- Basic version is a free download for engineering simple PLC solutions

**IEC 60309 international pin and sleeve devices**



IEC 60309 international pin and sleeve devices provide safe, reliable and durable electrical connections for different kinds of industrial applications and work conditions.

- IP67 and IP69K rated watertight connections
- Superior cable strain relief and cable detachment prevention
- Housed in flame safe (per UL 94) UV resistant (per UL 746c) material

**ABB Inc.**
Electrification Products
8155 T&B Boulevard
Memphis, TN 38125
abb.com/lowvoltage

Customer Service: 800-816-7809
7:00 a.m. - 5:30 p.m., CST, Monday-Friday
elec_custserv@tnb.com

Technical Support: 888-385-1221, Option 1
7:00 a.m. - 5:00 p.m., CST, Monday-Friday
lvps.support@us.abb.com



We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders and/or contracts, the agreed particulars shall prevail. ABB Inc. does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents - in whole or in parts - is forbidden without prior written consent of ABB Inc.

© Copyright 2017 ABB. All rights reserved.

1SXU159002B0201, September 2017